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State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Division of Oil, Gas and Mining
JOHN R. BAZA
Division Director

December 9, 2015

Lantz Indergard
Lisbon Valley Mining Company, LLC
755 North Main Street, Suite B
PO Box 400
Moab, Utah 84532

Subject: Review of Annual Waste Rock Monitoring Report, Lisbon Valley Mining Company, Lisbon Valley Copper Mine, M/037/0088, San Juan County, Utah

Dear Mr. Indergard:

The Division of Oil, Gas and Mining (Division) accepts the 2014 Annual Waste Rock Monitoring Report with the following observations and comments, some of which are duplicate comments from the review of the 2013 Annual Waste Rock Monitoring Report. These comments are intended to assist with preparation of your Waste Rock Management Plan requested in the review comments for the LVMC NOI submittal, and future reports. The Division is not requiring that the current report be modified, but please address these comments in your Waste Rock Management Plan.

It is requested that page numbers be added to the report for ease in referencing comments. The Division also requests that reports be submitted in three-ring binders rather than using plastic spines. All documents coming in are scanned to digital format, and the plastic spines make this difficult for the office staff.

Comment #	Location	Comment
1	Environmental Criteria	In the last sentence of the paragraph, it appears that the first use of the term "Likely Acid Neutralizing" should be "Likely Acid Generating," and the sentence should be completed to identify what characteristics make waste material acid generating.
2	Acid-Base Accounting	The limit for likely acid formation is reported to be +20 t $CaCO_3$/kt. Correct the limits of the Likely Acid Forming category to be NNP < -20 t $CaCO_3$/kt.
3 (NEW)	Acid-Base Accounting	Update the year in the second paragraph of the section where it currently says "Table 1 shows the 2013 averaged NNP. . . ." Data from 2014 should be shown in this report.

4 (NEW)	Acid-Base Accounting	Rock Type 3 has been considered acid neutralizing and apparently suitable as encapsulating material. Samples of Rock Type 3 in 2013 were considered acid generating due to the acid-base accounting results and the significantly low pH of the MWMP effluent. Samples of Rock Type 3 in 2014 are considered neutralizing or uncertain. Considering both past and current findings and relative volumes of acid and neutralizing material, please re-evaluate the nature of Rock Type 3, and update Table 1 if needed. Are any of Beds 3 through 5 likely to be acid forming?
5 (previous comment 3)	Waste Rock Handling & Survey	Identify the character (e.g. NPR) and encapsulation thickness of Rock Types 1-3 and 6-7, and that of any other Rock Types used for the encapsulation of Rock Types 4 and 5.
6 (NEW)	2013 Mining Activities	The date, data, and discussion should be changed annually to represent the year of the report.
7 (NEW)	2013 Waste Rock Sampling Results	Indicate that 9 out of 9 rock types have been analyzed with the expanded analyte list. Rock type J was added this year. Please also change the date.
8 (NEW)	Waste Dump As-Built Mapping	Indicate whether Rock Type 3 (which in 2013 was apparently handled as if it were Likely Acid Forming) can be easily discerned visually.
9 (Previous Comment 4)	Summary & Conclusions	Acknowledge that some of the individual samples from multiple rock types categorized as Likely Acid Neutralizing are likely acid generating, but that based on the averaged data the overall character of those rock types are likely neutralizing. Briefly discuss Rock Type 3, consistent with the Comment 4 above and the significance of the comparative volumes of different rock types wasted.
10 (NEW)	Appendix A	The data and date of the ABA table are the same from last year. This table needs to be updated annually. Please provide the updated ABA table with 2014 data.
11 (Previous Comment 5)	Appendix A	Explain changes to the percent sulfur and associated AGP, ANP, and NNP values from specific samples in from year to year.
12 (Previous Comment 6)	Appendix A	It appears that samples from 2013 should be identified as something other than drill pulp samples.
13 (NEW)	Appendix C	Despite some neutralization potential, the leachates from some samples showed a significant decrease in pH (e.g. RT3, 3rd Quarter). Despite no detected neutralization potential, the leachates from some samples showed a significant increase in pH (e.g. RT3 – 2nd Quarter, RT6 – 4th Quarter). Provide some brief possible explanation in the report.

14 (NEW)	Appendix E, Maps	Maps do not show the location of Rock Type 3 (Beds 3-5), which it appears is being selectively handled as if it were acid forming (at least in 2014). Maps should be updated to show the locations of material that is considered deleterious.

Please contact Peter Brinton at 801-538-5258, Mike Bradley at 801-538-5332, or me at 801-538-5261 if you have questions or concerns regarding this letter.

Sincerely,

Paul Baker
Minerals Program Manager

PBB: mpb: eb
cc: Dave Pals, BLM Moab FO (dpals@blm.gov)
Jerry Mansfield, SITLA (jmansfield@utah.gov)
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